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ABSTRACT

The use of an integrated student information system (ISIS) to conduct institutional research at Trinity University is discussed. The types of data contained in the system, which has 59 files, include: student characteristics, recruitment, financial aid, registration, faculty load, and class scheduling. The data for students, faculty, departments, divisions, and budgets are entered into the ISIS through terminals on 45 different terminal screens. Some of the data are also system-generated and/or maintained. Considerations in designing programs to extract information from the files are identified, along with methods to validate data. Preparing a program using the Statistical Package for the Social Sciences is described, with attention to logging and dating files for historical purposes, formatting data, choosing variables, and adding variables to existing files. Also considered are: techniques to examine selected subsets of students, faculty, or courses; modifying or generating study variables; methods of conducting multiple analyses from a single disk file; and generating ad hoc reports or standard, periodic reports. Two examples of documentation on course/faculty load and enrolled students are provided, including variable descriptions and field lengths. A sample program on attrition is included, along with a flowchart of the database. (Author/SW)

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Conducting Institutional Research Using An Integrated Student Information System

Paper Presented at the
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HE 018 935

ABSTRACT

Conducting Institutional Research Using an Integrated Student Information System

With the development of larger and more powerful computers, colleges and universities are now developing and using integrated student information systems (ISIS). This paper describes an ISIS and the methods which can be used to conduct institutional research using the information contained in the ISIS. The article begins by describing the types of data contained in the system (student demographics, academic histories, recruiting information, financial aid information, registration information, faculty load information, housing information, class scheduling information, business office information, and student fines information). The data for individual students, faculty members, departments, divisions, and budgets are input to the ISIS through terminals on 45 different terminal screens. Some of the data are also system-generated and/or maintained. The ISIS is composed of 59 files which are accessed by TOTAL.

To conduct institutional research using the ISIS files, one or more extract programs must be designed and developed. The questions to be asked in designing the extract programs are stated, and methods of validating the data which are obtained by the extract program are outlined.

A commercially available statistical package such as SPSS or SAS is used to analyze the data obtained by the extract programs. A description of how to prepare an SPSS program to create a disk file is given. This description includes logging and dating files for historical purposes, formatting data, choosing variables, and adding variables to existing files. The use of techniques to examine selected subsets of students, faculty, or courses at an institution and how to modify or generate variables in conducting institutional research is given. Methods of conducting multiple analyses from a single disk file, of generating standard reports on a periodic basis, of generating ad hoc reports, and of maintaining numbers of SPSS or SAS files is also described.

Finally, examples of three basic extracts are given. The first extract contains data on pre-enrolled persons (prospective students, applicant students, rejected applicants, applicants being processed, etc). The second extract contains data on enrolled graduate and undergraduate students and the third extract contains data on building utilization, course offerings, course meeting times, course meeting days, and faculty loads. Programs to conduct applicant flow analyses, faculty load analyses, attrition analyses, and enrollment analyses are presented and explained. Copies of the programs and their accompanying output are available on request.

Conducting Institutional Research Using An Integrated Student Information System

Introduction

The most time-consuming and tedious part of conducting institutional research is gathering data. Typically, a great deal of time is required to acquire the data from the offices in which they are gathered and filed. Figure 1 is a graphic representation of the way in which students enter Trinity University and conduct their academic affairs. Students gain entrance to the institution through the admissions office and then pass through the other offices at least once each semester. Until two years ago, all student data were kept in the individual offices and each of the individual offices used its own file system. All student information was kept in a "hard-copy" form. Given this type of a system and file structure, the director of institutional research or his assistant were required to go to a particular office or offices to gather data. Gathering data in a single office usually presented no real problems. However, when data were gathered in two or more offices, on the same students, the amount of work usually increased exponentially. The problems and frustrations associated with the merging of data on students, faculty, or courses across two or more offices are too numerous to mention. These problems were so numerous and serious that institutional research that was needed or that would provide information for administrative decision-making was frequently not conducted.

* *

Insert Figure 1 About Here

* *

Approximately two years ago, we here at Trinity University implemented an integrated student information system (ISIS). Figure 2 is a graphic representation of the way in which student and other information are processed as students enter and progress through our institution. All of our academically-oriented data are maintained in our IBM 370-3031 computer. Each of the academic offices on campus contain

computer terminals which permit persons who work there to access the database and to update or modify selected data elements in the database. When a person applies for admission, a file for this person is "opened" in the system and all of the application data are entered. Later, when the person enrolls, he/she processes through the offices on campus. The file which was "opened" for the applicant by the personnel in the admissions office is available for expansion to the personnel in each of the other offices. As a student is processed through each office (registered, billed, housed, etc.), his/her data are entered into a single master file at our computer center. Conducting institutional research from this database, where all of the data on students are held in the same place, is far different from conducting institutional research using many different data files which are separately maintained in a number of different offices. In our ISIS, the data for each student are loaded in the master file. The subsections of the master file for each student are cross-referenced. This arrangement makes it a relatively simple process to acquire the data needed to conduct institutional research.

* *

Insert Figure 2 About Here

* *

Data and File Structure

To understand how institutional research can be conducted using an ISIS, one must first understand what data are input, how the data are maintained, and how the files are structured. There are approximately 1500 variables in our ISIS. Many of the variables can have two or more entries for a given student, faculty member, or class. As a result, two students, faculty members, or classes seldom have the same number of variables in their files.

* *

Insert Figure 3 About Here

* *

The data are input to the ISIS through 65 on-line terminal screens into 54 separate subfiles (See Figure 3). In addition, some variables are maintained by the system and others are maintained through the use of batch programs which "roll" the data into particular fields. For example, a student's date of

birth would be input on an on-line basis through a terminal; a bill for room, board, and tuition would be system-maintained and automatically calculated; and the number of credit hours generated by a professor in a given course on the census day of a semester is maintained through a batch program which calculates the correct value and "rolls" it into the system. The batch or "roll" programs are ones which are run at specific times during a semester to update files which must all be updated at the same time in a semester or academic year.

The ISIS contains all student academic and personal data, all faculty data which deal with courses and teaching, all course data which deal with students, faculty, class meeting times, class meeting days, enrollment, buildings, the University calendar, catalog, and class schedules.

The majority of the ISIS files are BDAM (Basic Data Access Method) files. Several of the files are VSAM (Virtual System Access Method) files. TOTAL is used to manage the files in our ISIS.

Accessing Data

It is a relatively simple and straightforward process to access data on an individual student, faculty member, course, etc. in ISIS. If a person has the proper passwords, he can sign on to the system at a terminal, and by using the appropriate codes he can call up the data that he wants on one or more terminal screens. There are several sites on campus where the information that has been brought up on a screen can be printed.

While the accessing of data in ISIS for a particular observation is relatively simple, obtaining aggregated data is a very difficult and complex task. When we first purchased the license to use TOTAL as our database management system, we had an opportunity to purchase the license to a second portion of TOTAL which permits the user to access and aggregate data directly from the files. Since this second option costs approximately $40,000.00, we decided not to purchase the license for it. We therefore had to design and write several COBOL programs to extract the data from the ISIS in order to conduct institutional research and to develop ad hoc reports.

It was decided that three general purpose extract programs were needed. The first would be one which would extract data from the ISIS on prospective students and/or persons who made application for admission (Prospect/Applicant Extract).

The second extract would be one which would extract data on graduate and/or undergraduate students who were enrolled (Enrolled Student Extract). The third extract would be one which would extract data for all of the courses taught in a semester (Course/Faculty Load Extract). The extracts were designed by the director of institutional research who consulted with individuals in each of the major offices on campus. The purpose of the consultation was to identify the data elements in the ISIS which might be required by individuals on campus and thus have them included in the extract. The COBOL programs which were written to extract the data were designed to be flexible. Each extract program has options which permit it to extract data for any desired semester or series of semesters. The extract programs do not aggregate data as they extract it from the ISIS. Instead, all of the data for a student, faculty member, etc. is kept with all of the other data for that person. Each of the extract programs produces a tape of the data which are extracted.

* *

Insert Figures 4 and 5 About Here

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Figures 4 and 5 are partial listings of the data which are obtained through the use of two of the extracts. The data element listing for these extracts is too long to include all of it in this paper. Prior to the writing of the extract programs, we decided to use the same COBOL names for the data elements in the extracts that were used in the ISIS programs. This naming approach has permitted the many individuals who use the data obtained from the extracts to avoid confusion when discussing variables and requesting reports from personnel in the Computing Center.

Analyzing Data

The director of institutional research has developed a schedule for running the extract programs which the personnel in the Computing Center follow. Occasionally, the extract programs are run on a request basis. The extract tapes are filed by the tape librarian and serve as a historical resource. The Statistical Package for the Social Sciences (SPSS) is used to read the data from the tapes and to analyze the data. Initially, SPSS is used to read the data on a tape and to write it as a disk file. A summary of the distribution of all of the variables is made at the time that the disk file is produced. Before data

in the disk file are used for research purposes, the frequencies are examined to determine if there are any bad or out-of-range data. Once the data in the disk file have been checked, SPSS GET FILE commands are used to access and examine the data. An SPSS GET FILE command permits the user to access the disk file of data through the use of a very powerful statement. Any number of GET FILE commands can be used to access the data and an almost unlimited number of data analyses can be carried out with a single GET FILE command.

Data analyses are conducted on an IBM 3278 terminal which is connected to an IBM 370-3031. The preparation of the programs to read the extract tapes, to establish the disk files, and to prepare the GET FILE programs are all done in a CMS environment. All of the programs which are associated with a particular extract are filed in an FLIST under a single naming convention. For example, the SPSS program which reads the extract tape and writes the disk file for undergraduate enrollment is named UENROL. The other programs which access and use the data in this disk file are named UENROLA, UENROLB, UENROLC... UENROLZ. Some of these programs are designed to produce standard reports which are used on a regular, periodic basis, while others are programs which are written to be used only once. This naming and filing convention has proven to be very convenient, easily established, easily maintained, and very efficient. If, for example, a series of standard analyses or reports are required on the census day of a semester, then one GET FILE type program can be prepared to produce each analysis or report. The master program which reads the extract tape and produces the disk file is run first. Once the disk file is established, as many other GET FILE programs as necessary can be submitted at the same time. To complete all of the standard reports and analyses (one master program and eight GET FILES) of undergraduage census day enrollment for 2800 undergraduate students requires less than two minutes of CPU time and 20 minutes of elapsed time. This is a very efficient use of computer time as well as an efficient use of personal time and effort.

* *

Insert Figure 6 About Here

* *

Figure 6 contains an example of two different types of GET FILE programs. Both of these programs were designed to be used in performing an analysis of student attrition from the fall semester of 1982 to the fall semester of 1983. The information on the first ten cards of the two programs is identical. The first two cards contain the JCL information for

the program. The information which must be placed on these cards is determined by the system being used at a particular computer center. JCL information is readily available to computer users at an academic computer center. The third card (GET FILE UENROL) is an SPSS statement which instructs the computer to bring the disk file named "UENROL" into the computer so that the data in the file can be analyzed. The next two cards (Run Name... and Task Name...) contain written descriptions of the analyses to be performed by the programs. These two cards have no real control over the program and simply serve to label the output. The next five cards contain four SPSS commands. These SELECT IF commands cause the program to analyze the data for a particular subset of the students whose data appear on the tape. Further, when two or more SELECT IF statements are used together, there is an implied AND between the statements. The first SELECT IF command requires that only those students who entered Trinity University as freshmen (A), transfer freshmen (F), transfers (B), or continuing (X) students would be included in the analysis. The second SELECT IF command further limits the analysis to those students who have no registered semester hours (VAR106) in the current semester. The third SELECT IF command limits the analysis to those persons who had registered for one or more (GT = greater than) semester hours credit (VAR110) in the fall semester of 1982. The fourth SELECT IF command limits the analysis to those students who had earned less than (LT) 124 semester hours credit prior to the beginning of the current semester (VAR67). Taken collectively, these four SELECT IF statements limit the students whose data are to be analyzed to those who were registered for credit in the fall semester of 1982, are not registered for credit in 1983, have not graduated (LT 124), and who entered school here as freshmen, transfer freshmen, transfer, or continuing students. Simply stated, these are the students who would have been expected to return to college this semester but did not.

The frequencies and statistics commands (UENROLJ) will result in the development of frequency distributions and summary statistics for each variable whose number appears after the GENERAL = portion of the command. In the second portion of Figure 6 (UENROLI), there is a series of SPSS commands which generate an alphabetically ordered (SORT CASES) list of the names of those students who fit the criteria established in the SELECT IF statements. The following data will be printed alongside of each student's name: social security number (SSN), ethnicity (VAR12), student type (VAR13), credit hours taken in the fall semester of 1982 (VAR110), credit hours taken in the spring semester of 1983 (VAR109), credit hours taken in the two summer terms of 1983 (VAR108) and

(VAR107), the number of credit hours taken in the fall semester of 1983 (VAR106), composite SAT score (VAR33), grade-point average (VAR63), and the total number of credit hours earned prior to the opening of the fall 1983 semester (VAR67).

The first of the two programs produces an aggregate of selected data for the students who did not return to school. The second program produces a list of the students' names along with some key data for each student which might give some explanation as to why a particular student did not return to school or whether or not the students who did not return to school had something in common. The data produced by these two programs can give a great deal of information about student attrition.

To perform an attrition analysis without the use of computer programs such as these requires a great deal of time, personnel, and effort. An attrition analysis which is done by hand is also apt to have errors in it. The GET FILE programs described here can be run on a student body of approximately 3000 students using less than ten seconds of CPU time and less than two minutes of elapsed time. Also, these computer programs are not prone to the errors which a similar analysis would be if it were done by hand.

The programs dealing with an analysis of attrition are only two of a number of analyses which can be performed using a system of an ISIS, extracts, and SPSS. Many other types of analyses have been developed and are currently in use but space does not permit their presentation in this paper.

Institutions which do not have an ISIS must spend more time, energy, and manpower to collect and analyze institutional data than those institutions which do have such a system. Much more timely, relevant, and valid management and research information can be obtained through the use of an ISIS than from any other type of system. An ISIS permits an almost instantaneous retrieval of information on individual students, faculty, and courses. There are some problems associated with the retrieval of data for aggregation from an ISIS but these can be overcome through the development of a series of extract programs. Care and effort must go into the design and development of the extract programs. Carefully developed extract programs produce data sets for researchers which are an invaluable source of current and historical information.

The data obtained by the extract programs can be analyzed with commercially available statistical analysis packages such as SPSS. SPSS can be easily used by persons who are not computer programmers, which means that a large number of statistical analyses can be performed without the use of highly

trained computer programmers or statisticians. Also, SPSS contains a large number of very powerful commands which are very simply stated, easily learned, and result in the computer doing a great deal of work for very little effort on the part of the researcher.

Our institution implemented an ISIS and I was confronted with the task of developing a management information system and an institutional research system. I developed a system in which data extracted from the ISIS were analyzed with a commercially available statistical package (SPSS). This combination used in conjunction with a computer terminal which is connected to a large main frame have permitted me to develop an institutional research system for our institution which has proven to be very efficient and effective.

Figure 1

Traditional Record-Keeping System

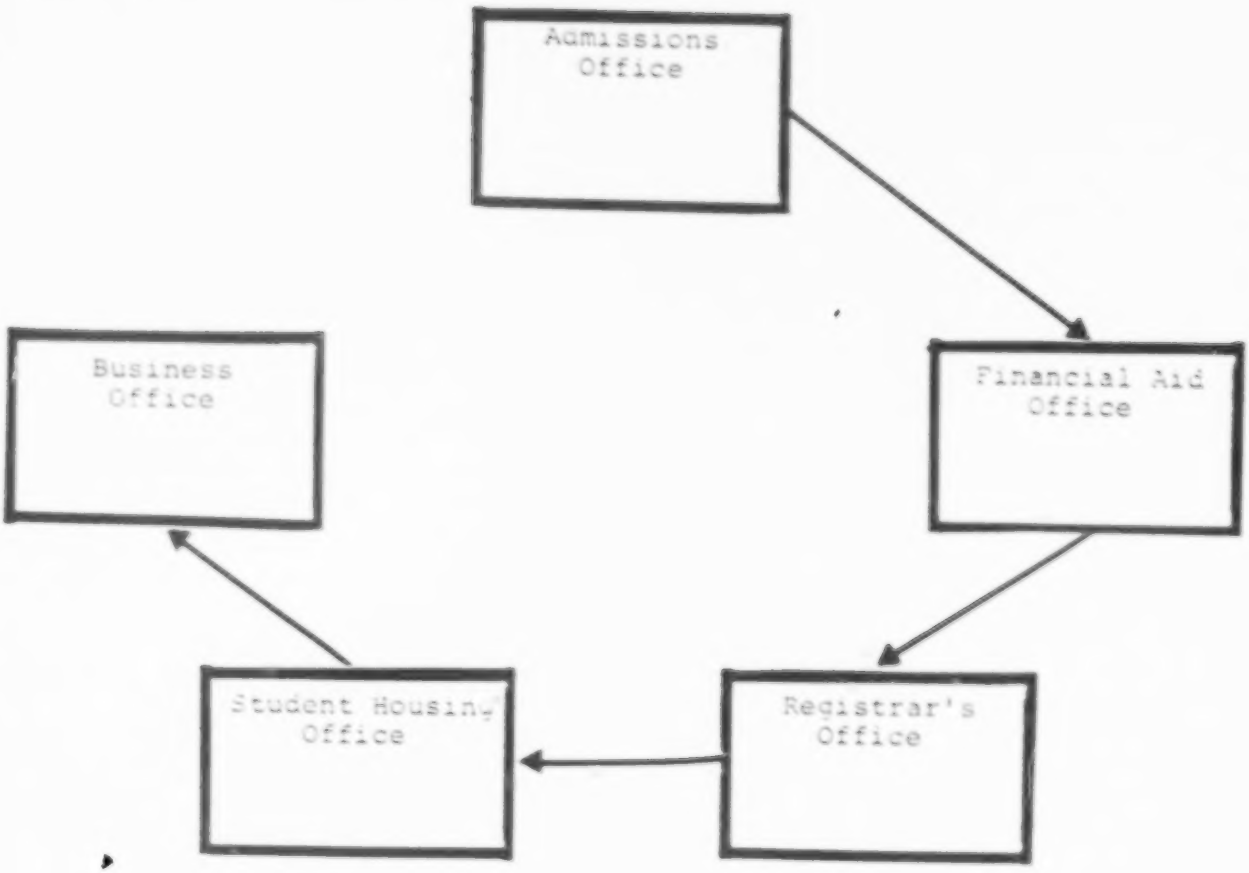

Figure 2

Record-Keeping Under An
Integrated Student Information System

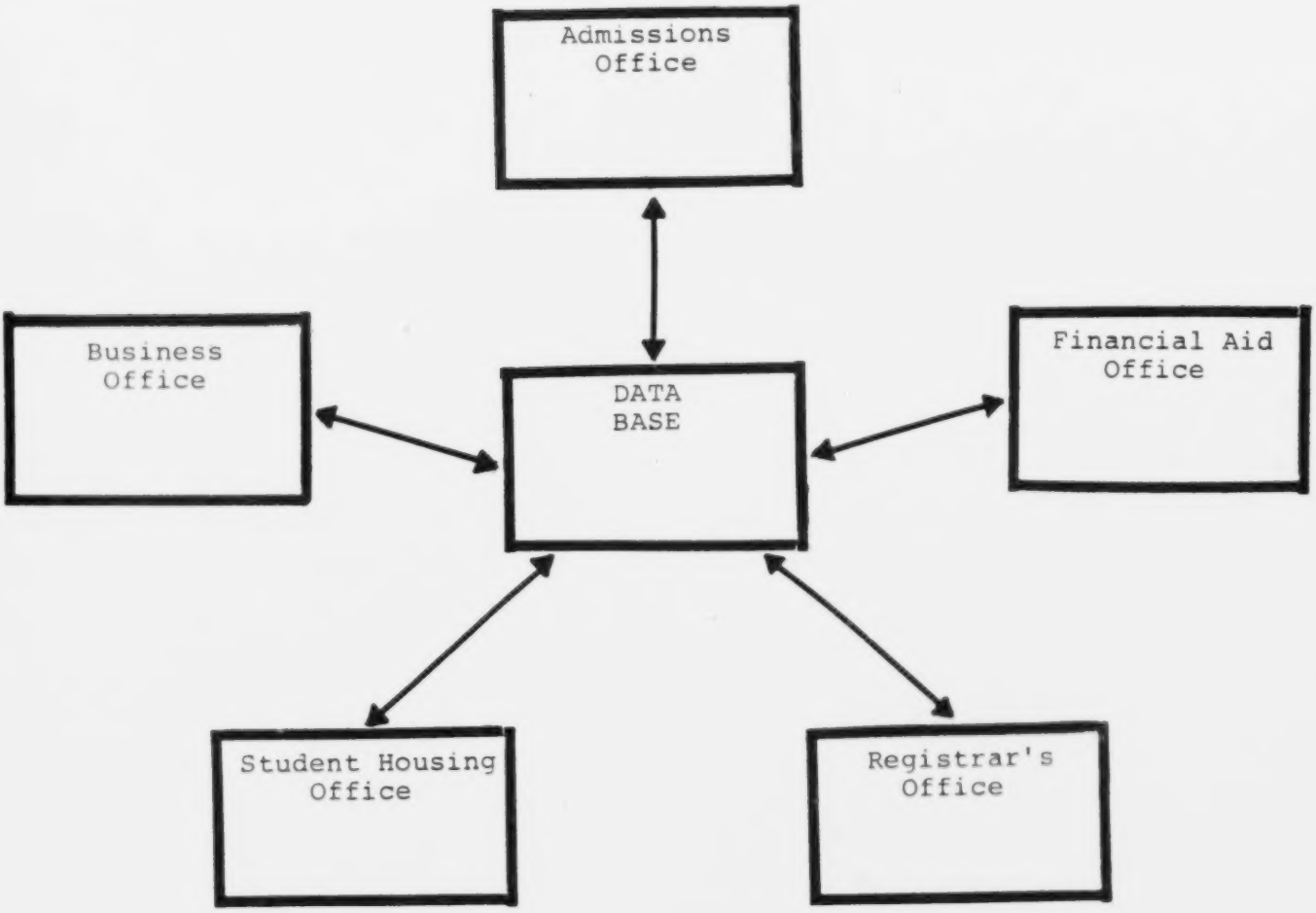

Figure 3

Trinity University
I.S.I.S.
DATABASE
SCHEMATIC

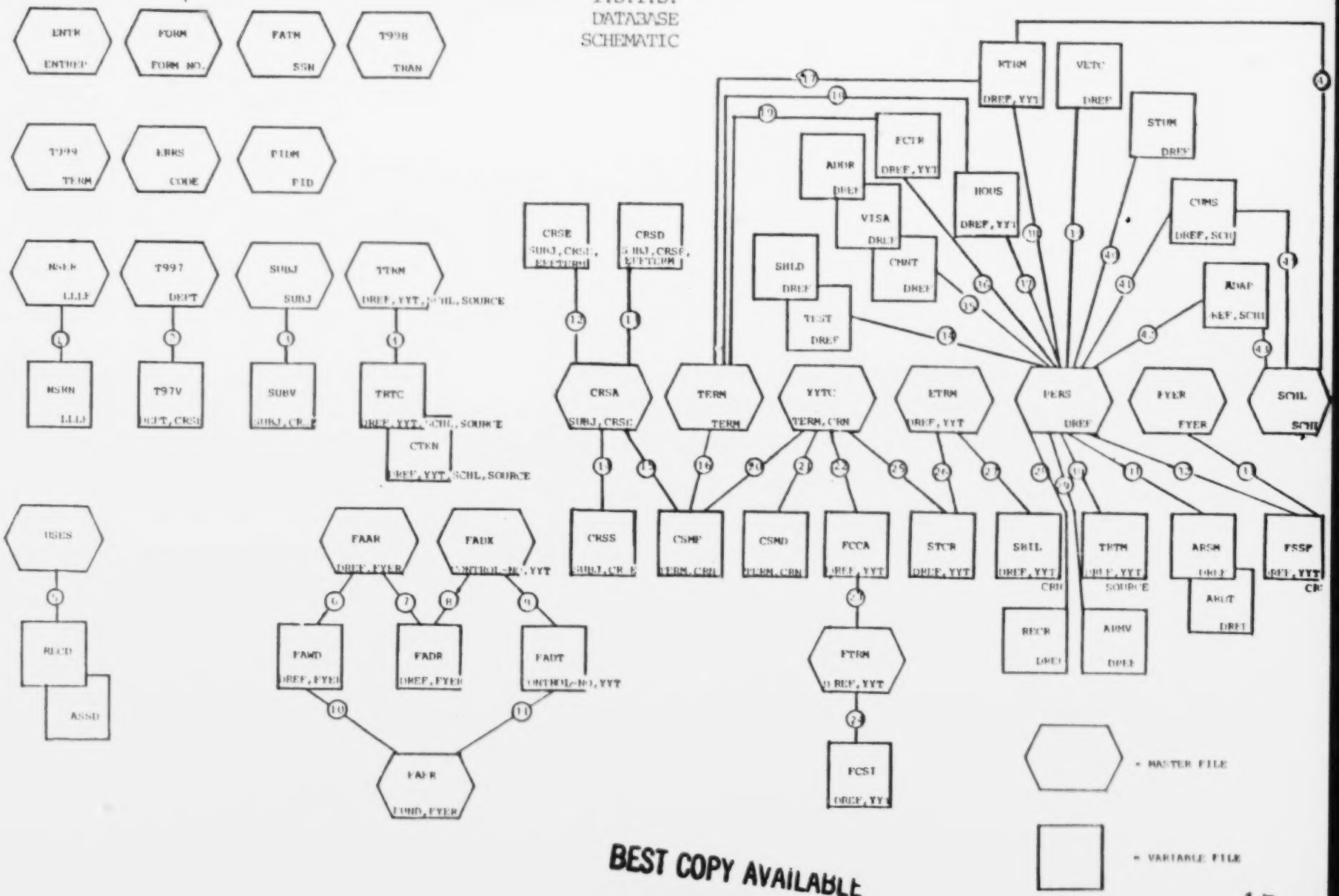

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Figure 4

Course/Faculty Load Extract Documentation

Element Name	Pos.	Length	Type	
SUBJECT	1	4	A	
NAME-(FULL)	5	30	A	
NAME-(ABBREVIATED)	35	10	A	
COURSE	45	4	A	
TERM	49	4	A	
FILLER	53	50	A	
*				
USED-CW1	103	3	A	
CREDIT-HOURS	106	4	A	
ACADU	110	4	A	Department
INSTRUCTOR-ID (1)	114	9	A	
INSTRUCTOR-NAME (1)	123	21	A	
INSTRUCTOR-ID (2)	144	9	A	
INSTRUCTOR-NAME (2)	153	21	A	
INSTRUCTOR-ID (3)	174	9	A	
INSTRUCTOR-NAME (3)	183	21	A	
*				
MEETING-DATA				
DAY	204	7	A	
BEGIN-TIME	211	4	A	
END-TIME	215	4	A	
BUILDING	219	5	A	
ROOM	224	5	A	
COURSE-TYPE	379	2	A	Graduate/Undergraduate
COURSE-NAME	381	30	A	
COURSE-USRS	411	2	A	
COURSE-APPR	413	4	A	
HEGIS	417	6	A	
HEGIS-NAME	423	30	A	
HEGIS-PROG	453	3	A	
HEGIS-USOE	456	8	A	
HEGIS-HEGIS	464	6	A	
FL-SCHDCD (1)	470	1	A	Type of delivery -
FL-FACTR1 (1)	471	5	N3	lecture, lab, etc.
FL-SCHDCD2 (2)	476	1	A	
FL-FACTR2 (2)	477	5	N3	
FL-SCHDCD3 (3)	482	1	A	
FL-FACTR3	483	5	N3	
FILLER	488	100	A	

Figure 5

Enrolled Student Extract Documentation

Variable Name	Variable Description	Start	Length	A/N	
PERS*ID*NO	PERSONS IDENTIFICATION NO	001	009	A	
PERS*NAME	PERSONS FULL LEGAL NAME	010	030	A	
BIRTH*DTE	DATE OF BIRTH	040	006	A	
CITIZEN	CITIZENSHIP STATUS	046	001	A	
ETHNIC	ETHNIC CODE	047	001	A	
HANDI	HANDICAP INDICATOR	048	001	A	
SEX	PERSONS SEX	049	001	A	
MARITAL	MARITAL STATUS	050	001	A	
NOK*NAME	EMERGENCY CONTACT NAME	051	030	A	
NOK*RELAT	EMERGENCY CONTACT RELATIONSHIP	081	001	A	
CONFID	CONFIDENTIALITY CODE	082	001	A	
ADAP*STAT	ADMISSION STATUS	313	002	A	
ADAP*SCHL	SCHOOL U OR G	315	002	A	
ENTRY*TERM	ENTRY TERM	317	003	A	
STUDY	STUDENT TYPE	320	001	A	
APPLY*DTE	DATE APPLICATION RECEIVED	321	006	A	
MAJOR	PROGRAM OF MAJOR	327	003	A	
MAJ1	MAJOR ONE	330	003	A	
MAJ2	MAJOR TWO	333	003	A	
MAJ3	MAJOR THREE	336	003	A	
HIGH*SCH	HIGH SCHOOL CODE	339	006	A	
HS*RANK	HIGH SCHOOL RANK	345	010	A	
HS*GPA	HIGH SCHOOL GPA	355	003	A	
HS*GDTE	HIGH SCHOOL GRAD.DATE	358	004	A	
T*GPA	PRIOR COLLEGE GPA	362	003	A	
FIN*AID	FINANCIAL AID INDICATOR	365	001	A	
HOUS*IND	HOUSING INDICATOR	366	001	A	
DORM*IND	DORM DEPOSIT INDICATOR	367	001	A	
COUNS*NO	COUNSELOR NUMBER	368	003	A	
INITIALS9	RECR CONTACT INITIALS	801	003	A	Recruiting Contacts
CONT*DAT9	RECR CONTACT DATE	804	006	A	
CONT*TYP10	RECR CONTACT TYPE	810	003	A	
INITIALS10	RECR CONTACT INITIALS	813	003	A	
CONT*DAT10	RECR CONTACT DATE	816	006	A	
CONT*TYP11	RECR CONTACT TYPE	822	003	A	
INITIALS11	RECR CONTACT INITIALS	825	003	A	
CONT*DAT11	RECR CONTACT DATE	828	006	A	
CONT*TYP12	RECR CONTACT TYPE	834	003	A	
INITIALS12	RECR CONTACT INITIALS	837	003	A	
CONT*DAT12	RECR CONTACT DATE	840	006	A	
FILLER	----------	846	050	A	

TS*TYP*SAT	TEST TYPE SAT	896	002	A	
SAT*DATE	TEST DATE TAKEN SAT	898	006	A	
SAT*SCORES	TEST SCORES SAT	904	020	A	Standard
TS*TYP*ACT	TEST TYPE ACT	924	002	A	Test Scores
ACT*DATE	TEST DATE TAKEN ACT	926	006	A	
ACT*SCORES	TEST SCORES ACT	932	020	A	
TS*TY*TDE	TEST TYPE TOEFL	980	002	A	
TOE*DATE	TEST DATE TAKEN TOEFL	982	006	A	
TOE*SCORE	TEST SCORES TOEFL	988	020	A	
SATUNOFTYP	TEST TYPE SAT UNOFF	1008	002	A	
SATUNOFDTE	TEST DATE TAKEN SAT UNOFF	1010	006	A	
SATunofsco	TEST SCORES SAT UNOFF	1016	020	A	
ACTUNOFTYP	TEST TYPE ACT UNOFF	1036	002	A	
ACTUNOFDTE	TEST DATE ACT UNOFF	1038	006	A	
ACTUNOFSCO	TEST SCORES ACT UNOFF	1044	020	A	
FILLER	----------	1064	050	A	
ADV*PLACE	ADVANCED PLACEMENT CREDIT HOURS	1114	005	A	
CRE*EXAM	CREDIT HOURS EARNED BY EXAM	1119	005	A	
CUM*GPA	CUMULATIVE GPA	1124	003	A	
CUM*GPAHR	CUMULATIVE GRADE POINT HOURS	1127	005	A	
CUM*GPAPT	CUMULATIVE GRADE POINTS	1132	008	A	
CUM*HRSA	CUMULATIVE HOURSE ATTEMPTED	1140	005	a	
CUM*HRSE	CUMULATIVE HOURS EARNED	1145	005	A	
ACAD*STAT	STUDENTS CURRENT ACADEMIC STATUS	1150	001	A	
ACAD*STDT	STUDENTS CURRENT ACADEMIC STATUS TERM	1151	003	A	
TFER*HE	TRANSFER CREDIT HOURS EARNED	1154	005	A	
TTL*AMT1	AWARD TOTAL AMOUNT (1)	1377	006	A	
TTL*AMT2	AWARD TOTAL AMOUNT (2)	1383	006	A	
TTL*AMT3	AWARD TOTAL AMOUNT (3)	1389	006	A	
TTL*AMT4	AWARD TOTAL AMOUNT (4)	1395	006	A	
TOTL*AMT5	AWARD TOTAL AMOUNT (5)	1401	006	A	Scholarships
FUND*NO1	NUMBER OF AWARD FUND (1)	1417	003	A	and Loans
FUND*NO2	NUMBER OF AWARD FUND (2)	1420	003	A	
FUND*NO3	NUMBER OF AWARD FUND (3)	1423	003	A	
FUND*NO4	NUMBER OF AWARD FUND (4)	1426	003	A	
FUND*NO5	NUMBER OF AWARD FUND (5)	1429	003	A	
	----------	1432	050	A	
HOUS*DORM	DORMITORY	1485	005	A	
HOUS*ROOM	DORMITORY ROOM	1490	005	A	
HOUS*PHONE	DORMITORY TELEPHONE NO.	1495	007	A	
MEAL*PLAN	MEAL PLAN	1502	001	A	

ETRM*HRS1	REGISTRATION CREDIT HOURS(1)	1700	004	A	
ETRM*HRS2	REGISTRATION CREDIT HOURS(2)	1704	004	A	Registered credit hours for each semester
ETRM*HRS3	REGISTRATION CREDIT HOURS(3)	1708	004	A	
ETRM*HRS4	REGISTRATION CREDIT HOURS(4)	1712	004	A	
ETRM*HRS5	REGISTRATION CREDIT HOURS(5)	1716	004	A	
ETRM*HRS6	REGISTRATION CREDIT HOURS(6)	1720	004	A	
FEE*CODE	PAYMENT CODE 1	1809	004	A	Payment codes for fees paid and billed
FEE*CODE	PAYMENT CODE 2	1813	004	A	
FEE*CODE	PAYMENT CODE 3	1817	004	A	
FEE*CODE	PAYMENT CODE 4	1821	004	A	

Figure 6

GET FILE Programs

```
//UENROLJ JOB
//SPSS EXEC
GET FILE          UENROL
RUN NAME          ATTRITION ANALYSIS.  FALL 1983 TO FALL 1984.
TASK NAME         ATTRITION FOR STUD TPS A, B, F, AND X FOR ALL
                  E TERMS.
SELECT IF         (VAR13 EQ 'A' OR VAR13 EQ 'F' OR VAR13 EQ 'B'
                  OR VAR13 EQ 'X')
SELECT IF         (VAR106 EQ 0)
SELECT IF         (VAR110 GT 0)
SELECT IF         (VAR67 LT 124)
FREQUENCIES       GENERAL = VAR03 TO VAR07 VAR12 VAR13 VAR15
                  VAR16 VAR20 VAR33 VAR40 VAR61 VAR62 VAR63
                  VAR67 VAR70 VAR96 VAR97 VAR129 VAR106 TO
                  VAR111 VAR92
STATISTICS        ALL
FINISH


//UENROLI JOB
//SPSS EXEC
GET FILE          UENROL
RUN NAME          RUN FROM AN EXTRACT SET FOR 833 WITH BUCKETS
                  TO 843
TASK NAME         ATTRITION - STUD TP A, B, F, X FOR ALL E TERMS.
SELECT IF         (VAR13 EQ 'A' OR VAR13 EQ 'F' OR VAR13 EQ 'B'
                  OR VAR13 EQ 'X')
SELECT IF         (VAR106 EQ 0)
SELECT IF         (VAR110 GT 0)
SELECT IF         (VAR67 LT 124)
SORT CASES        VAR127 VAR12
REPORT            FORMAT = LIST /
                  STRING = SSN (VAR01 (5) VAR02 (4))
                  NAME (VAR127 (4) VAR128 (4))/
                  VARS =
                    NAME 'NAME' (8)
                    SSN 'SOCSECN' (9)
                    VAR12 'ET' (3)
                    VAR13 'ST''TYP' (3)
                    VAR110 'CH''833' (5)
                    VAR109 'CH''834' (5)
                    VAR108 'CH''841' (5)
                    VAR107 'CH''842' (5)
                    VAR106 'CH''843' (5)
                    VAR33 'SAT' (4)
                    VAR63 'GPA' (5)
                    VAR67 'HRS''ERND' (4)/
                  MISSING = VAR/
                  BREAK = VAR71/
                  SUMMARY = VALIDN /
FINISH
```